

REMARKS

In view of the following discussion, the Applicant submits that none of the claims now pending in the application are obvious under the provisions of 35 U.S.C. §103. Thus, the Applicant believes that all of these claims are now in condition for allowance.

I. REJECTION OF CLAIMS 1-13, 15-22 AND 24-27 UNDER 35 U.S.C. §103

A. Claims 1-3, 7, 12, 13, 15, 18, 21 and 24

The Examiner rejected claims 1-3, 7, 12, 13, 15, 18, 21 and 24 as being unpatentable under 35 U.S.C. § 103 over Freeburg (U.S. Patent No. 4,850,032, issued July 18, 1989, hereinafter referred to as "Freeburg") in view of Bi, et al. (U.S. Patent No. 5,970,414, issued on October 19, 1999, hereinafter referred to as "Bi"). The Applicant respectfully traverses the rejection.

Freeburg teaches a data communication system that communicates messages by way of a radio frequency channel between a network control processor (NCP 102) and subscriber radios (190). (see Abstract).

Bi teaches a method for estimating a mobile telephone's location. The method uses forward link power control. (See Bi, Abstract). The base station calculates the mobile telephone's location. (See Bi, FIG. 5A, col. 6, l. 56 – col. 7, l. 6).

The Examiner's attention is directed to the fact that Freeburg and Bi, alone or in any permissible combination, fail to teach or suggest transmitting the mobile station position from the mobile station to one or more of the plurality of base stations. Specifically, Applicant's independent claims 1, 18, 21 and 24 respectively recite:

1. A method for determining a location of a mobile station, comprising:
receiving at said mobile station a plurality of simulcast signals having substantially identical information from a plurality of base stations;
determining relative time of arrival information for the received plurality of simulcast signals;
determining a position of the mobile station by said mobile station;
and
transmitting the mobile station position from the mobile station to one or more of the plurality of base stations. (Emphasis added).

18. A method for receiving location information for a mobile station at a base station, comprising:
transmitting simulcast signals having substantially identical information to the mobile station; and
receiving, at said base station, mobile station location information from the mobile station determined from relative time of arrival information for the simulcast signals. (Emphasis added).
21. A mobile station, comprising:
a receiver for receiving simulcast signals having substantially identical information from a plurality of base stations;
a processor for determining time of arrival information for the received simulcast signals and identifying a location of the mobile station; and
a transmitter for transmitting the mobile station location to one or more of the plurality of base stations. (Emphasis added).
24. A wireless network for providing location specific information to a mobile station, comprising:
a mobile station for receiving the simulcast signals and determining a location of the mobile station; and
a plurality of base stations for transmitting the simulcast signals having substantially identical information and receiving said location of the mobile station transmitted from the mobile station. (Emphasis added).

The Applicant's disclosure teaches a method for determining the location of a mobile station utilizing simulcasted signals that are transmitted from a plurality of base stations. Simulcasting is the transmission of a particular signal from a plurality of base stations at the same moment in time. Specifically, the Applicant describes simulcasting as the "simultaneous transmission of substantially the same information content from multiple base stations" (See e.g., Applicant's specification, page 5, paragraph 3). Namely, simulcasting creates an artificial multipath environment that is used by the Applicant's system to create diversity. Applicant's disclosure teaches a system that can simulcast simultaneous transmission of substantially identical information from a plurality of basestations BS1-N. With this arrangement, the link performance is improved by simulating multipath. Since the same signal from multiple base stations is received by a mobile station, the difference in path delay results in frequency selective fading with narrow spacing between multipath nulls interacting with the inherent

frequency diversity of the OFDM system. (See e.g., Applicant's specification, page 6, paragraph 5).

Furthermore, the mobile station is able to determine its location or position from the received simulcasted signals. Namely, the mobile station's location or position is determined or derived by the mobile station itself by using the received simulcasted signals. (See e.g., Applicant's specification, page 5, paragraphs 2 and 4; page 6, paragraph 2). This information may be subsequently transmitted from the mobile stations to the base stations and utilized for location specific advertising or multi-casting location specific information. (See *Id.* at p. 11, ll. 1-16).

The Applicant submits that the alleged combination (as taught by Freeburg) fails to render obvious the Applicant's claims because the alleged combination fails to teach or suggest transmitting the mobile station position from the mobile station to one or more of the plurality of base stations. The Examiner concedes this in the Office Action (See Office Action, p. 3, ll. 1-3). However, the Examiner asserts that Bi bridges the substantial gap left by Freeburg. The Applicant respectfully disagrees.

Bi does not bridge the substantial gap left by Freeburg because Bi also fails to teach or suggest the novel method of simulcasting of signals to a mobile station from a plurality of base stations and transmitting the mobile station position from the mobile station to one or more of the plurality of base stations. Bi suffers from the same deficiency as suffered by Freeburg. Specifically, Bi teaches that the base station estimates the mobile-telephone's location based upon time of arrival and pilot signal strength information sent by the mobile telephone. (See Bi, FIG. 5A, col. 6, l. 56 – col. 7, l. 6).

In stark contrast, the Applicant teaches that the mobile station calculates the mobile station's location. Subsequently, the mobile station transmits the mobile station position to the base station. Notably, the claims do recite transmitting information in general. Rather, the claims require a very specific piece of information to be sent from the mobile station to the base station (i.e. the mobile station position). Notably, nowhere does Bi teach or suggest that the mobile telephone send its own location information to the base station. Bi explicitly teaches that the base station estimates the

mobile-telephone's location. Thus, it is impossible for the mobile telephone to transmit the mobile telephone's location to the base station in Bi. Therefore, the Applicant contends that independent claims 1, 18, 21 and 24 are not rendered obvious by Freeburg and Bi.

Dependent claims 2-3, 7, 12, 13 and 15 depend, either directly or indirectly, from claim 1 and recite additional features thereof. As such and for the exact same reasons set forth above, the Applicant submits that claims 2-3, 7, 12, 13 and 15 are also not rendered obvious by the teachings of Freeburg and Bi. Therefore, the Applicant submits that claims 2-3, 7, 12, 13 and 15 fully satisfy the requirements of 35 U.S.C. §103 and are patentable thereunder.

B. Claims 4, 19, 22, and 25

The Examiner rejected claims 4, 19, 22 and 25 as being unpatentable under 35 U.S.C. § 103 over Freeburg and Bi and in further view of Siwiak (U.S. Patent No. 5,537,398, issued on July 16, 1996, hereinafter referred to as "Siwiak"). The Applicant respectfully traverses the rejection.

The teachings of Freeburg and Bi are discussed above. Siwiak teaches an apparatus for multi-rate simulcast communications. (See Siwiak, Abstract).

The Examiner's attention is directed to the fact that Freeburg, Bi and Siwiak, alone or in any permissible combination, fail to disclose the novel method of simulcasting of signals to a mobile station from a plurality of base stations and transmitting the mobile station position from the mobile station to one or more of the plurality of base stations, as positively claimed by the Applicant's independent claims 1, 18, 21, and 24. (See *supra*). As discussed above, Freeburg and Bi simply do not teach or suggest a method of simulcasting of signals to a mobile station from a plurality of base stations and transmitting the mobile station position from the mobile station to one or more of the plurality of base stations.

Moreover, Siwiak does not bridge the substantial gap left by Freeburg and Bi because Siwiak also fails to teach or suggest the novel method of simulcasting of signals to a mobile station from a plurality of base stations and transmitting the mobile

station position from the mobile station to one or more of the plurality of base stations. Thus, for all of the above reasons, the Applicant respectfully contends the combination of Freeburg, Bi and Siwiak fail to render obvious the Applicant's independent claims 1, 18, 21, and 24.

Moreover, dependent claims 4, 19, 22 and 25 depend from independent claims 1, 18, 21 and 24, respectively and recite additional limitations. As such, and for the exact same reason set forth above with regard to the independent claims being patentable over Freeburg, Bi and Siwiak, the Applicant submits that claims 4, 19, 22 and 25 are also patentable over Freeburg, Bi and Siwiak.

C. Claims 5 and 6

The Examiner rejected claims 5 and 6 as being unpatentable under 35 U.S.C. § 103 over Freeburg, Bi and Siwiak and further in view of the Stilp et al. (U.S. Patent Publication No. 2005/0206566, published on September 22, 2005, hereinafter referred to as "Stilp"). The Applicant respectfully traverses the rejection.

The teachings of Freeburg, Bi and Siwiak are discussed above. Stilp teaches a multiple pass location processor. (See Stilp, Abstract).

The Examiner's attention is directed to the fact that Freeburg, Bi, Siwiak and Stilp, alone or in any permissible combination, fail to disclose the novel method of simulcasting of signals to a mobile station from a plurality of base stations and transmitting the mobile station position from the mobile station to one or more of the plurality of base stations, as positively claimed by the Applicant's independent claims 1, 18, 21, and 24. (See *supra*). As discussed above, Freeburg, Bi and Siwiak simply do not teach or suggest a method of simulcasting of signals to a mobile station from a plurality of base stations and transmitting the mobile station position from the mobile station to one or more of the plurality of base stations.

Moreover, Stilp does not bridge the substantial gap left by Freeburg, Bi and Siwiak because Stilp also fails to teach or suggest the novel method of simulcasting of signals to a mobile station from a plurality of base stations and transmitting the mobile station position from the mobile station to one or more of the plurality of base stations.

Thus, for all of the above reasons, the Applicant respectfully contends that the combination of Freeburg, Bi, Siwiak and Stilp fails to render obvious the Applicant's independent claims 1, 18, 21, and 24.

Moreover, dependent claims 5 and 6 depend from independent claim 1, respectively and recite additional limitations. As such, and for the exact same reason set forth above with regard to the independent claims being patentable over Freeburg, Bi, Siwiak and Stilp, the Applicant submits that claims 5 and 6 are also patentable over Freeburg, Bi, Siwiak and Stilp.

D. Claims 8, 10 and 11

The Examiner rejected claims 8, 10 and 11 as being unpatentable under 35 U.S.C. § 103 over Freeburg and Bi in view of Watters, et al. (U.S. Patent No. 5,982,324, issued November 9, 1999, hereinafter referred to as "Watters"). The Applicant respectfully traverses the rejection.

The teachings of Freeburg and Bi are discussed above. Watters teaches the combination of GPS with TOA/TDOA of cellular signals to locate a terminal. (See Watters, Abstract)

The Examiner's attention is directed to the fact that Freeburg, Bi and Watters, alone or in any permissible combination, fail to disclose the novel method of simulcasting of signals to a mobile station from a plurality of base stations and transmitting the mobile station position from the mobile station to one or more of the plurality of base stations, as positively claimed by the Applicant's independent claims 1, 18, 21, and 24. (See *supra*). As discussed above, Freeburg and Bi simply do not teach or suggest a method of simulcasting of signals to a mobile station from a plurality of base stations and transmitting the mobile station position from the mobile station to one or more of the plurality of base stations.

Moreover, Watters does not bridge the substantial gap left by Freeburg and Bi because Watters also fails to teach or suggest the novel method of simulcasting of signals to a mobile station from a plurality of base stations and transmitting the mobile station position from the mobile station to one or more of the plurality of base stations.

Thus, for all of the above reasons, the Applicant respectfully contends that the combination of Freeburg, Bi and Watters fails to render obvious the Applicant's independent claims 1, 18, 21, and 24.

Moreover, dependent claims 8, 10 and 11 depend from independent claim 1 and recite additional limitations. As such, and for the exact same reason set forth above with regard to the independent claims being patentable over Freeburg, Bi and Watters, the Applicant submits that claims 8, 10 and 11 are also patentable over Freeburg, Bi and Watters.

E. Claim 9

The Examiner rejected claim 9 as being unpatentable under 35 U.S.C. § 103 over Freeburg and Bi in view of Baum, et al. (U.S. Patent No. 5,867,478, issued February 2, 1999, hereinafter referred to as "Baum"). The Applicant respectfully traverses the rejection.

The teachings of Freeburg and Bi are discussed above. Baum teaches a synchronous coherent orthogonal frequency division multiplexing system. (See Baum, Abstract)

The Examiner's attention is directed to the fact that Freeburg, Bi and Baum, alone or in any permissible combination, fail to disclose the novel method of simulcasting of signals to a mobile station from a plurality of base stations and transmitting the mobile station position from the mobile station to one or more of the plurality of base stations, as positively claimed by the Applicant's independent claims 1, 18, 21, and 24. (See *supra*). As discussed above, Freeburg and Bi simply do not teach or suggest a method of simulcasting of signals to a mobile station from a plurality of base stations and transmitting the mobile station position from the mobile station to one or more of the plurality of base stations.

Moreover, Baum does not bridge the substantial gap left by Freeburg and Bi because Baum also fails to teach or suggest the novel method of simulcasting of signals to a mobile station from a plurality of base stations and transmitting the mobile station position from the mobile station to one or more of the plurality of base stations. Thus,

for all of the above reasons, the Applicant respectfully contends that the combination of Freeburg, Bi and Baum fails to render obvious the Applicant's independent claims 1, 18, 21, and 24.

Moreover, dependent claim 9 depends from independent claim 1 and recites additional limitations. As such, and for the exact same reason set forth above with regard to the independent claims being patentable over Freeburg, Bi and Baum, the Applicant submits that claim 9 is also patentable over Freeburg, Bi and Baum.

F. Claims 16 and 17

The Examiner rejected claims 16 and 17 as being unpatentable under 35 U.S.C. § 103 over Freeburg and Bi and in further view of Oren (U.S. Patent No. 6,725,045, issued on April 20, 2004, hereinafter referred to as "Oren"). The Applicant respectfully traverses the rejection.

The teachings of Freeburg and Bi are discussed above. Oren teaches a method and system for locating people and routing telephone calls to telephone stations selected by the called party. According to some embodiments of the present invention, the system may include wireless personal units and a location and routing unit adapted to locate the personal units and to route an incoming call intended for a telephone user associated with a particular personal unit to any one of the telephone stations selected by the telephone user (See Oren, Abstract).

The Examiner's attention is directed to the fact that Freeburg, Bi and Oren, alone or in any permissible combination, fail to disclose the novel method of simulcasting of signals to a mobile station from a plurality of base stations and transmitting the mobile station position from the mobile station to one or more of the plurality of base stations, as positively claimed by the Applicant's independent claims 1, 18, 21, and 24. (See *supra*). As discussed above, Freeburg and Bi simply do not teach or suggest a method of simulcasting of signals to a mobile station from a plurality of base stations and transmitting the mobile station position from the mobile station to one or more of the plurality of base stations.

Moreover, Oren does not bridge the substantial gap left by Freeburg and Bi

because Oren also fails to teach or suggest the novel method of simulcasting of signals to a mobile station from a plurality of base stations and transmitting the mobile station position from the mobile station to one or more of the plurality of base stations. Thus, for all of the above reasons, the Applicant respectfully contends that the combination of Freeburg, Bi and Oren fails to render obvious the Applicant's independent claims 1, 18, 21, and 24.

Moreover, dependent claims 16 and 17 depend from independent claim 1 and recite additional limitations. As such, and for the exact same reason set forth above with regard to the independent claims being patentable over Freeburg, Bi and Oren, the Applicant submits that claims 16 and 17 are also patentable over Freeburg, Bi and Oren. As such, the Applicant respectfully requests the rejection be withdrawn.

G. Claims 20 and 26

The Examiner rejected claims 20 and 26 as being unpatentable over Freeburg, Bi and Siwiak and further in view of the Oren under 35 U.S.C. § 103.

The teachings of Freeburg, Bi, Siwiak and Oren are discussed above.

The Examiner's attention is directed to the fact that Freeburg, Bi, Siwiak and Oren, alone or in any permissible combination, fail to disclose the novel method of simulcasting of signals to a mobile station from a plurality of base stations and transmitting the mobile station position from the mobile station to one or more of the plurality of base stations, as positively claimed by the Applicant's independent claims 1, 18, 21, and 24. (See *supra*). As discussed above, Freeburg, Bi and Siwiak simply do not teach or suggest a method of simulcasting of signals to a mobile station from a plurality of base stations and transmitting the mobile station position from the mobile station to one or more of the plurality of base stations.

Moreover, Oren does not bridge the substantial gap left by Freeburg, Siwiak and Bi because Oren also fails to teach or suggest the novel method of simulcasting of signals to a mobile station from a plurality of base stations and transmitting the mobile station position from the mobile station to one or more of the plurality of base stations. Thus, for all of the above reasons, the Applicant respectfully contends that the

combination of Freeburg, Bi, Siwiak and Oren fails to render obvious the Applicant's independent claims 1, 18, 21, and 24.

Moreover, dependent claims 20 and 26 depend from independent claims 18 and 24, respectively and recite additional limitations. As such, and for the exact same reason set forth above with regard to the independent claims being patentable over Freeburg, Bi, Siwiak and Oren, the Applicant submits that claims 20 and 26 are also patentable over Freeburg, Bi, Siwiak and Oren.

H. Claim 27

The Examiner rejected claim 27 as being unpatentable under 35 U.S.C. § 103 over Freeburg and Bi in view of Oren. The Applicant respectfully traverses the rejection.

The teachings of Freeburg, Bi and Oren are discussed above.

The Examiner's attention is directed to the fact that Freeburg, Bi and Oren, alone or in any permissible combination, fails to teach or suggest a wireless network comprising a plurality of base stations for receiving mobile station location information derived by the mobile stations from at least one of the mobile stations. Specifically, Applicant's independent claim 27 respectively recites:

27. A wireless network, comprising:
a plurality of base stations for transmitting simulcast signals having substantially identical information to mobile stations and receiving mobile station location information derived by the mobile stations from at least one of the mobile stations to broadcast location specific information to the mobile stations. (Emphasis added).

The Applicant's disclosure teaches a method for determining the location of a mobile station utilizing simulcasted signals that are transmitted from a plurality of base stations. Simulcasting is the transmission of a particular signal from a plurality of base stations at the same moment in time. Specifically, the Applicant describes simulcasting as the "simultaneous transmission of substantially the same information content from multiple base stations" (See e.g., Applicant's specification, page 5, paragraph 3).

Namely, simulcasting creates an artificial multipath environment that is used by the Applicant's system to create diversity. Applicant's disclosure teaches a system that can simulcast simultaneous transmission of substantially identical information from a plurality of basestations BS1-N. With this arrangement, the link performance is improved by simulating multipath. Since the same signal from multiple base stations is received by a mobile station, the difference in path delay results in frequency selective fading with narrow spacing between multipath nulls interacting with the inherent frequency diversity of the OFDM system. (See e.g., Applicant's specification, page 6, paragraph 5).

Furthermore, the mobile station is able to determine its location or position from the received simulcasted signals. Namely, the mobile station's location or position is determined or derived by the mobile station itself by using the received simulcasted signals. (See e.g., Applicant's specification, page 5, paragraphs 2 and 4; page 6, paragraph 2). This information may be subsequently transmitted from the mobile stations to the base stations and utilized for location specific advertising or multi-casting location specific information. (See *Id.* at p. 11, ll. 1-16).

The Applicant submits that the alleged combination (as taught by Freeburg and Bi) fails to render obvious the Applicant's claims because the alleged combination fails to teach or suggest a plurality of base stations for receiving mobile station location information derived by the mobile stations from at least one of the mobile stations. As discussed above the combination of Freeburg and Bi fail to teach or suggest a plurality of base stations for receiving mobile station location information derived by the mobile stations from at least one of the mobile stations. Freeburg and Bi suffer from the same deficiency. Specifically, Bi teaches that the base station estimates the mobile-telephone's location based upon time of arrival and pilot signal strength information sent by the mobile telephone. (See Bi, FIG. 5A, col. 6, l. 56 – col. 7, l. 6).

In stark contrast, the Applicant teaches that the mobile station calculates the mobile station's location. Subsequently, the mobile station transmits the mobile station position to the base station. Notably, the claims do recite transmitting information in general. Rather, the claims require a very specific piece of information to be sent from

the mobile station to the base station (i.e. the mobile station position). Notably, nowhere does Bi teach or suggest that the mobile telephone send its own location information to the base station. Bi explicitly teaches that the base station estimates the mobile-telephone's location. Thus, it is impossible for the mobile telephone to transmit the mobile telephone's location to the base station in Bi.

Oren fails to bridge the substantial gap left by Freeburg and Bi because Oren also fails to teach or suggest the novel wireless network comprising a plurality of base stations for receiving mobile station location information derived by the mobile stations from at least one of the mobile stations. Oren only teaches a method and system for locating people and routing telephone calls to telephone stations selected by the called party.

Therefore, the Applicant contends that independent claim 27 is not rendered obvious by Freeburg, Bi and Oren. As such, the Applicant requests the rejection be withdrawn.

CONCLUSION


Thus, the Applicant submits that all of these claims now fully satisfy the requirements of 35 U.S.C. § 103. Consequently, the Applicant believes that all these claims are presently in condition for allowance. Accordingly, both reconsideration of this application and its swift passage to issue are earnestly solicited.

If, however, the Examiner believes that there are any unresolved issues in any of the claims now pending in the application, it is requested that the Examiner telephone Mr. Kin-Wah Tong, Esq. at (732) 842-8110 x130 so that appropriate arrangements can be made for resolving such issues as expeditiously as possible.

Respectfully Submitted,

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